1638

#9

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/762,105

DATE: 10/25/2002
TIME: 16:16:29

Input Set : A:\09762105.txt
Output Set: N:\CRF4\10252002\I762105.raw

<110> APPLICANT: Rutgers, The State University of New Jersey
Maliga, Pal
Kuroda, Hiroshi
Khan, Muhammad Sarwar
<120> TITLE OF INVENTION: Translation Control Elements for High-Level Protein Expression in the Plastids of Higher Plants and Methods of Use Thereof
<130> FILE REFERENCE: Rut 00-0010
<140> CURRENT APPLICATION NUMBER: 09/762,105
<141> CURRENT FILING DATE: 2001-04-23
<150> PRIOR APPLICATION NUMBER: PCT/US99/17806
<151> PRIOR FILING DATE: 1999-08-03
<150> PRIOR APPLICATION NUMBER: 60/138,764
<151> PRIOR FILING DATE: 1999-06-11
<150> PRIOR APPLICATION NUMBER: 60/095,163
<151> PRIOR FILING DATE: 1998-08-03
<150> PRIOR APPLICATION NUMBER: 60/095,167
<151> PRIOR FILING DATE: 1998-08-03
<150> PRIOR APPLICATION NUMBER: 60/112,257
<151> PRIOR FILING DATE: 1998-12-15
<150> PRIOR APPLICATION NUMBER: 60/131,611
<151> PRIOR FILING DATE: 1999-04-29
<160> NUMBER OF SEQ ID NOS: 106
<170> SOFTWARE: FastSEQ for Windows Version 3.0
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<211> LENGTH: 227
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
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aggggggcagg gatggctata tttctgggag aattaaccga tcgacgtgca agcggacatt 120
tattttaaat tcgataattt ttgcaaaaac atttcgacat atttatttat tttattatta 180
tgagaatcaa tcctactact tctggttctg gggtttccac ggctagc 227
<210> SEQ ID NO: 2
<211> LENGTH: 191
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 2
gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg 60

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65  agggggcagg gatggctata tttctgggag aattaaccga tcgacgtgca agcggacatt     120
66  tattttaaat tcgataattt ttgcaaaaac atttcgacat atttatttat tttattatta     180
67  tgagagctag c                                                         191
69 <210> SEQ ID NO: 3
70 <211> LENGTH: 227
71 <212> TYPE: DNA
72 <213> ORGANISM: Artificial Sequence
74 <220> FEATURE:
75 <223> OTHER INFORMATION: Synthetic sequence
77 <400> SEQUENCE: 3
78  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
79  agggggcagg gatggctata tttctgggag aattaaccga tcgacgtgca agcggacatt     120
80  tattttaaat tcgataattt ttgcaaaaac atttcgacat atttatttat tttattatta     180
81  tgagaataaa cccgacaaca agtggaagtg gggtgtccac ggctagc                   227
83 <210> SEQ ID NO: 4
84 <211> LENGTH: 196
85 <212> TYPE: DNA
86 <213> ORGANISM: Artificial Sequence
88 <220> FEATURE:
89 <223> OTHER INFORMATION: Synthetic sequence
91 <400> SEQUENCE: 4
92  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
93  agggggcagg gatggctata tttctgggag ttacgtttcc acctcaaagt gaaatatagt     120
94  atttagttct ttctttcatt taatgcctat tggtgttcca aaagtccctt tccgaagtcc     180
95  tggagaggaa gctagc                                                    196
97 <210> SEQ ID NO: 5
98 <211> LENGTH: 154
99 <212> TYPE: DNA
100 <213> ORGANISM: Artificial Sequence
102 <220> FEATURE:
103 <223> OTHER INFORMATION: Synthetic sequence
105 <400> SEQUENCE: 5
106  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
107  agggggcagg gatggctata tttctgggag ttacgtttcc acctcaaagt gaaatatagt     120
108  atttagttct ttctttcatt taatgcctgc tagc                                154
110 <210> SEQ ID NO: 6
111 <211> LENGTH: 195
112 <212> TYPE: DNA
113 <213> ORGANISM: Artificial Sequence
115 <220> FEATURE:
116 <223> OTHER INFORMATION: Synthetic sequence
118 <400> SEQUENCE: 6
119  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
120  agggggcagg gatggctata tttctgggag tcgagtagac cttgttgttg tgaaaattct     120
121  taattcatga gttgtaggga gggatttatg tcaccacaaa cagagactaa agcaagtgtt     180
122  ggattcaaag ctagc                                                     195
124 <210> SEQ ID NO: 7
125 <211> LENGTH: 159
126 <212> TYPE: DNA
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<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
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agggggcagg gatggctata tttctgggag tcgagtagac cttgttgttg tgaaaattct 120
taattcatga gttgtaggga gggatttatg tcagctagc 159
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<211> LENGTH: 195
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 8
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agggggcagg gatggctata tttctgggag tcgagtagac cttgttgttg tgaaaattct 120
taattcatga gttgtaggga gggatttatg aguccucaga cagaaacaaa agccucagta 180
ggattcaaag ctagc 195
<210> SEQ ID NO: 9
<211> LENGTH: 195
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 9
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agggggcagg gatggctata tttctgggag caatgcaata aagttacgta gtgtctattt 120
atctttgata taaggggtat ttccatgggt ttgccttggt atcgtgttca taccgttgta 180
ttgaatgatg ctagc 195
<210> SEQ ID NO: 10
<211> LENGTH: 153
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 10
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agggggcagg gatggctata tttctgggag caatgcaata aagttacgta gtgtctattt 120
atctttgata taaggggtat ttccatggct agc 153
<210> SEQ ID NO: 11
<211> LENGTH: 201
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 11
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agggggcagg gatggctata tttctgggaa aaaagccttc cattttctat tttgatttgt 120
agaaaactag tgtgcttggg agtccctgat gattaaataa accaagattt taccatgact 180

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190  gcaattttag agagagctag c                                                201
192 <210> SEQ ID NO: 12
193 <211> LENGTH: 183
194 <212> TYPE: DNA
195 <213> ORGANISM: Artificial Sequence
197 <220> FEATURE:
198 <223> OTHER INFORMATION: Synthetic sequence
200 <400> SEQUENCE: 12
201  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
202  agggggcagg gatggctata tttctgggaa aaaagccttc cattttctat tttgatttgt     120
203  agaaaactag tgtgcttggg agtccctgat gattaaataa accaagattt taccatggct     180
204  agc                                                                   183
206 <210> SEQ ID NO: 13
207 <211> LENGTH: 185
208 <212> TYPE: DNA
209 <213> ORGANISM: Artificial Sequence
211 <220> FEATURE:
212 <223> OTHER INFORMATION: Synthetic sequence
214 <400> SEQUENCE: 13
215  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
216  agggggcagg gatggctata tttctgggag caaaaagcct tccattttct attttgattt     120
217  gtagaaaact agtgtgcttg ggagtccctg atgattaaat aaaccaagat tttaccatgg     180
218  ctagc                                                                 185
220 <210> SEQ ID NO: 14
221 <211> LENGTH: 182
222 <212> TYPE: DNA
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: Synthetic sequence
228 <400> SEQUENCE: 14
229  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
230  agggggcagg gatggctata tttctgggag ggagaccaca acggtttccc actagaaata     120
231  attttgttta actttaagaa ggagatatac atatggcaag catgactggt ggacaggcta     180
232  gc                                                                    182
234 <210> SEQ ID NO: 15
235 <211> LENGTH: 182
236 <212> TYPE: DNA
237 <213> ORGANISM: Artificial Sequence
239 <220> FEATURE:
240 <223> OTHER INFORMATION: Synthetic sequence
242 <400> SEQUENCE: 15
243  gagctcgctc ccccgccgtc gttcaatgag aatggataag aggctcgtgg gattgacgtg      60
244  agggggcagg gatggctata tttctgggag ggagaccaca acggtttccc actagaaata     120
245  attttgttta actttaagaa ggagatatac atatggcaat cactagccct gccttggcta     180
246  gc                                                                    182
248 <210> SEQ ID NO: 16
249 <211> LENGTH: 161
250 <212> TYPE: DNA
251 <213> ORGANISM: Artificial Sequence
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<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 16
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attttgttta actttaagaa ggagatatac atatggctag c 161
<210> SEQ ID NO: 17
<211> LENGTH: 1183
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 17
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gattgacgtg agggggcagg gatggctata tttctgggag cgaactccgg gcgaatacga 120
agcgcttgga tacagttgta gggagggatc catggctagc attgaacaag atggattgca 180
cgcaggttct ccggccgctt gggtggagag gctattcggc tatgactggg cacaacagac 240
aatcggctgc tctgatgccg ccgtgttccg gctgtcagcg caggggcgcc cggttctttt 300
tgtcaagacc gacctgtccg gtgccctgaa tgaactccag gacgaggcag cgcggctatc 360
gtggctggcc acgacgggcg ttccttgcgc agctgtgctc gacgttgtca ctgaagcggg 420
aagggactgg ctgctattgg gcgaagtgcc ggggcaggat ctcctgtcat ctcaccttgc 480
tcctgccgag aaagtatcca tcatggctga tgcaatgcgg cggctgcata cgcttgatcc 540
ggctacctgc ccattcgacc accaagcgaa acatcgcatc gagcgagcac gtactcggat 600
ggaagccggt cttgtcgatc aggatgatct ggacgaagag catcaggggc tcgcgccagc 660
cgaactgttc gccaggctca aggcgcgcat gcccgacggc gaggatctcg tcgtgacaca 720
tggcgatgcc tgcttgccga atatcatggt ggaaaatggc cgcttttctg gattcatcga 780
ctgtggccgg ctgggtgtgg cggaccgcta tcaggacata gcgttggcta cccgtgatat 840
tgctgaagag cttggcggcg aatgggctga ccgcttcctc gtgctttacg gtatcgccgc 900
tcccgattcg cagcgcatcg ccttctatcg ccttcttgac gagttcttct gagcgggtct 960
agagtagaca ttagcagata aattagcagg aaataaagaa ggataaggag aaagaactca 1020
agtaattatc cttcgttctc ttaattgaat tgcaattaaa ctcggcccaa tcttttacta 1080
aaaggattga gccgaatacа acaaagattc tattgcatat attttgacta agtatatact 1140
tacctagata tacaagattt gaaatacaaa atctagcaag ctt 1183
<210> SEQ ID NO: 18
<211> LENGTH: 610
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic sequence
<400> SEQUENCE: 18
ccatggcacc acaaacagag agcccagaac gacgcccggc cgacatccgc cgtgccaccg 60
aggcggacat gccggcggtc tgcaccatcg tcaaccacta catcgagaca agcacggtca 120
acttccgtac cgagccgcag gaaccgcagg agtggacgga cgacctcgtc cgtctgcggg 180
agcgctatcc ctggctcgtc gccgaggtgg acggcgaggt cgccggcatc gcctacgcgg 240
gcccctggaa ggcacgcaac gcctacgact ggacggccga gtcgaccgtg tacgtctccc 300
cccgccacca gcggacggga ctgggctcca cgctctacac ccacctgctg aagtccctgg 360
aggcacaggg cttcaagagc gtggtcgctg tcatcgggct gcccaacgac ccgagcgtgc 420
gcatgcacga ggcgctcgga tatgcccccc gcggcatgct gcgggcggcc ggcttcaagc 480
acgggaactg gcatgacgtg ggtttctggc agctggactt cagcctgccg gtaccgcccc 540

VERIFICATION SUMMARY DATE: 10/25/2002
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